ASSIGNMENT 6

Textbook Assignment: "Brakes," chapter 7, pages 7-1 through 7-40.

6-1. What term is used to describe the energy an object possesses due to its relative motion?

1. Potential energy
2. Kinetic energy
3. Static energy
4. Perpetual motion

6-2. When the speed of a vehicle is doubled, the amount of kinetic energy that must be overcome by braking action is multiplied by

1. 10 times
2. 2 times
3. 3 times
4. 4 times

6-3. The time frame between the instant the operator decides that the brakes should be applied and the moment the brake system is activated is known by what term?

1. Total reaction time
2. Decision reaction time
3. Operator reaction time
4. Stopping reaction time

6-4. The distance during the operator's reaction time and the distance during which the brakes are applied before the vehicle stops is known by what term?

1. Vehicle travel distance
2. Total stopping distance
3. Overall reaction distance
4. Braking travel distance

6-5. In answering this question, refer to figure 7-3 in the text. You are driving an average vehicle with brakes that are in good condition. What is the vehicle braking distance for the vehicle when you are traveling at 60 miles per hour?

1. 186 feet
2. 171 feet
3. 163 feet
4. 159 feet

6-6. Which of the following factors will NOT increase braking temperatures?

1. Extreme weather conditions
2. Operator abuse
3. Load on the vehicle
4. Speed of the vehicle

6-7. On a typical rear-wheel drive vehicle the front brakes will handle what percentage of the braking power?

1. 60 to 70
2. 70 to 80
3. 30 to 40
4. 40 to 50

6-8. Of the following functions, which one is NOT a function of the master cylinder in a hydraulic brake system?

1. Develops pressure
2. Assists in equalizing the pressure required for braking
3. Keeps the system full of fluid
4. Prevents fluid from seeping past the cups of the wheel cylinders

6-9. Which of the following factors is an advantage of having a dual master cylinder in a hydraulic brake system?

1. It enables the brakes to be applied with less effort
2. There is less chance of the brakes malfunctioning
3. It causes the brake shoes to wear longer
4. It makes for a safer brake system

6-10. The front piston in a dual master cylinder is known as the primary piston.

1. True
2. False

6-11. What dual master cylinder system operates the brake assemblies on opposite comers?

1. Latitudinal split
2. Longitudinal split
3. Diagonal split
4. Equidistant split

6-12. A dual master cylinder with a large front reservoir is an indication of what type of brake system?

1. Latitudinal split
2. Longitudinal split
3. Diagonal split
4. Equidistant split

6-13. Where are the residual check valves located in a diagonally split system?

1. In the rear reservoir of the master cylinder
2. At the wheel cylinder
3. At the tees that split the system front to rear
4. In the combination valve

6-14. What brake system component changes hydraulic pressure into mechanical force?

1. Wheel cylinder
2. Master cylinder
3. Combination valve
4. Brake drum

6-15. What type of wheel cylinder is used to compensate for a faster rate of wear on the front brake shoe?

1. Stepped
2. Single-piston
3. Sliding-piston
4. Double-anchor

6-16. Brake lines are constructed from what type of material?

1. Seamless aluminum tubing
2. Seamed aluminum tubing
3. Single-wall steel tubing
4. Double-wall steel tubing

6-17. What component is used to feed two-wheel cylinders from a single brake line?

1. Poppet valve
2. Counterbalance valve
3. Junction block
4. Pressure-control block

6-18. Which of the following properties is NOT a characteristic of brake fluid?

1. Moisture absorbent
2. Low freezing point
3. Noncorrosive
4. High boiling point

6-19. The primary brake shoe is the front shoe and normally has a slightly shorter lining than the secondary shoe.

1. True
2. False

6-20. What type of brake lining does NOT wear the brake drum excessively?

1. Metallise
2. Semimetallic
3. Nonmetallic
4. Metallic

6-21. What type of brake shoe adjusting system is operable in both forward and reverse directions?

1. Link
2. Lever
3. Chain
4. Cable

6-22. Which of the following actions is a disadvantage of drum brakes?

1. No means of adjustment
2. Brake fade
3. Decreased braking distances
4. Allows excessive cooling air to enter the assembly

6-23. Which of the following actions is an advantage of disc brakes?

1. Reduces braking distances
2. Increases brake fade
3. Collects asbestos dust in the brake cavity
4. Dissipates heat through the brake hub

6-24. Of the following components, which one is NOT part of a disc brake assembly?

1. Brake pads
2. Caliper
3. Brake hub
4. Rotor

6-25. What component of a caliper acts as a spring to retract the piston?

1. Dust boot
2. Piston seal
3. Boot seal
4. Caliper clip

6-26. Metal tabs are built into some disc brake pads for the purpose of

1. notifying the operator of worn brakes
2. allowing easy installation and removal from the caliper
3. preventing the pads from coming out of the caliper during operation
4. identifying the type of lining material used on the pads

6-27. What are the three type of disc brakes?

1. Semi-fixed caliper, fixed caliper, and sliding caliper
2. Semi-floating caliper, fixed caliper, and floating caliper
3. Sliding caliper, semi-floating caliper, and semi-fixed caliper
4. Fixed caliper, floating caliper, and sliding caliper

6-28. What type of caliper is designed to permit equal braking force to be applied to both sides of the rotor?

1. Semi-floating
2. Semi-fixed
3. Floating
4. Fixed

6-29. On a dual brake system, what switch warns the operator of a pressure loss on one of the sides?

1. Master cylinder
2. Stoplight
3. Combination
4. Brake warning light

6-30. In a combination valve, what valve holds off front disc braking until the rear brakes makes contact with the drums?

1. Proportioning
2. Metering
3. Pressure differential
4. Pressure reducing

6-31. In an antilock brake system (ABS), what component modulates the amount of braking pressure (PSI) going to a specific wheel circuit?

1. Trigger wheels
2. Hydraulic actuator
3. Wheel speed sensors
4. ABS computer

6-32. During the operation of an antilock brake system, what component measures trigger wheel rotation?

1. Hydraulic actuator
2. ABS computer
3. Frequency reducer
4. Wheel speed sensor

6-33. When antilock brakes are in use, you may feel a vibration in the brake pedal.

1. True
2. False

6-34. To develop the additional force required to apply the brakes, most power brake systems use the difference between

1. exhaust manifold vacuum and hydraulic pressure
2. exhaust pressure and pneumatic vacuum
3. intake manifold vacuum and atmospheric pressure
4. manifold air vacuum and exhaust gas pressure

6-35. What are the two types of vacuum boosters?

1. Atmospheric suspended and vacuum suspended
2. Hydraulic suspended and pneumatic suspended
3. Vacuum suspended and hydraulic suspended
4. Pneumatic suspended and atmospheric suspended

6-36. What component is designed to make vacuum available for a short time to the booster unit should the vehicle have to stop quickly with a stalled engine?

1. Vacuum chamber
2. Vacuum reservoir
3. Vacuum valve
4. Vacuum manifold

6-37. Which of the following actions will occur when you check a vacuum power booster for proper operation?

1. The brake pedal will move upwards slightly
2. The brake pedal move downward slightly then upwards
3. The brake pedal will move downward slightly
4. There is NO brake pedal movement

6-38. Which of the following conditions will cause a vacuum failure in the power booster, resulting in a hard brake pedal?

1. A collapsed vacuum hose at the exhaust manifold
2. A broken air valve spring
3. A broken power piston linkage
4. A faulty check valve

6-39. Should the power steering system fail, what component of a hydraulic power booster retains enough fluid and pressure for at least two brake applications?

1. Hydraulic reservoir
2. Pressure regulator
3. Accumulator
4. Booster valve

6-40. The parking/emergency brake must hold a vehicle on any grade.

1. True
2. False

6-41. Emergency brake requirements are listed in what publication?

1. NAVFAC P-300
2. COMSECONDNCB/ COMTHIRDNCBINST 11200.1
3. *Code of Federal Regulations*
4. *Federal Motor Carrier Safety Regulation Pocketbook*

6-42. You are checking the fluid level in a master cylinder. How far should the fluid be from the top of the reservoir?

1. 1/4 inch
2. 1/8 inch
3. 1/2 inch
4. 1/16 inch

6-43. The distance from the floor to the brake pedal with the brake applied is known as the brake pedal

1. height
2. free play
3. reserve distance
4. performance distance

6-44. Disc brake pads should be replaced when the lining is approximately how thick?

1. 1/32 inch
2. 1/16 inch
3. 1/8 inch
4. 1/4 inch

6-45. When reconditioning a master cylinder, you should take what action if the bore is NOT badly pitted or corroded?

1. Install a sleeve in the bore
2. Hone the cylinder
3. Machine the bore oversize
4. Sand the bore using emery cloth

6-46. Which of the following tools is NOT used to determine if a master cylinder bore is worn excessively?

1. Outside micrometer
2. Inside caliper
3. Feeler gauge
4. Telescoping gauge

6-47. Before installing a master cylinder on a vehicle, you should take what action?

1. Lubricate all parts with denatured alcohol
2. Remove the inlet ports and check for obstructions
3. Install the master cylinder clamp
4. Bench bleed the master cylinder

6-48. What action should be taken when you find any pitting, scoring, or scratching in the bore of a wheel cylinder?

1. Replace the wheel cylinder
2. Hone the cylinder bore
3. Install a cylinder sleeve
4. Sand the cylinder bore with emery cloth

6-49. Why should you install a wheel cylinder clamp before removing the brake shoes?

1. To facilitate removal of the brake shoe retracting springs
2. To prevent the loss of brake fluid should someone accidentally depress the brake pedal
3. To keep dirt out of the cylinder when cleaning the backing plate
4. To hold the pistons in the wheel cylinder

6-50. When the rivet holes in a brake shoe become enlarged, you should take what action?

1. Install oversize rivets
2. Weld the holes closed and re-drill
3. Discard the brake shoe
4. Drill new holes in the shoe

6-51. When riveting the lining to a brake shoe, you should start

1. at one end of the lining, then alternately work towards the other
2. by first riveting both ends, then work alternately toward the center of the lining
3. at one end and work down one side then the other
4. in the center and work alternately toward each end of the lining

6-52. Normally, what is the maximum amount of surface material that can be removed from a brake drum and still provide adequate braking?

1. .006 inch
2. .060 inch
3. .003 inch
4. .030 inch

6-53. What tool should you use to measure the diameter of a brake drum?

1. Brake drum caliper
2. Brake drum telescoping gauge
3. Brake drum micrometer
4. Brake drum circumference gauge

6-54. When replacing disc brake shoes, you force the caliper pistons into the bores of the caliper to

1. determine if the pistons are free to move in the caliper
2. open the caliper wide enough for the new thicker pads
3. inspect for hydraulic leaks around the piston seal
4. open the caliper wide enough for the removal of the rust ridge on the disc

6-55. What tool should you use to check a brake disc for runout?

1. Micrometer
2. Outside caliper
3. Thickness gauge
4. Dial indicator

6-56. When the disc brake runout is beyond the manufacturer's specifications, you should take what action?

1. Resurface the disc
2. Tighten the wheel bearings
3. Replace the caliper
4. Discard the disc

6-57. Which of the following defects is the most likely cause of soft, spongy action of the brake pedal in a hydraulic brake system?

1. Faulty pedal return spring
2. Sticking wheel cylinder
3. Air trapped in the brake lines
4. A clogged master cylinder breather

6-58. When removing air from the hydraulic brake system, you should bleed one brake at a time starting with the wheel cylinder located

1. nearest to the master cylinder
2. farthest from the master cylinder
3. on the left front
4. on the right front

6-59. When you pressure bleed a hydraulic brake system, the bleeder ball should be charged with what amount of air pressure?

1. 5 to 10 psi
2. 15 to 20 psi
3. 20 to 25 psi
4. 10 to 15 psi

6-60. The function of the governor in an air brake system is to maintain the air pressure in the reservoir.

1. True
2. False

6-61. The governor maintains the proper pressure required for safe operation by controlling what component?

1. The compressor unloader mechanism
2. The pilot valves
3. The pressure differential valve
4. The spring tube

6-62. What gauge should you use to adjust the type O-1 governor accurately?

1. Thickness gauge
2. Vacuum gauge
3. Depth gauge
4. Air pressure gauge

6-63. To decrease the pressure range in the type O-1 governor, you may

1. add shims beneath the upper valve guide
2. remove shims from the upper valve guide
3. turn the adjusting screw clockwise
4. turn the adjusting screw counter-clockwise

6-64. At what pressure range, within the type D governor, will the air pressure allow the exhaust stem to close the exhaust valve and to open the inlet valve?

1. 80-90 psi
2. 90-100 psi
3. 100-110 psi
4. 110-120 psi

6-65. In a type D governor, at what pressure range will the spring loading within the governor overcome the developed force of the air pressure under the diaphragm?

1. 80-85 psi
2. 90-95 psi
3. 100-105 psi
4. 110-115 psi

6-66. To increase the pressure setting of the type D governor, you must perform which of the following tasks?

1. Turn the adjusting nut counter-clockwise
2. Turn the adjusting screw clockwise
3. Add shims to the inlet valve guide
4. Remove shims from the inlet valve guide

6-67. What is the function of the unloader assembly?

1. To cool, store, and remove moisture from the air
2. To protect the brake system against excessive pressure
3. To stop and start compression in the compressor
4. To control the air pressure that is delivered to the brake chambers

6-68. What component is used to cool, store, and remove moisture from the air and give a smooth flow of air to the brake system?

1. Unloader mechanism
2. Reservoirs
3. Air pressure diaphragm
4. Pressure differential mechanism

6-69. What is the function of the safety valve located on top of the first reservoir?

1. To prevent moisture buildup in the system
2. To protect the system against excessive back pressure
3. To prevent air pressure from reaching it's maximum setting
4. To protect the system against excessive air pressure

6-70. What component is designed to convert the energy of compressed air into mechanical force and motion?

1. Brake valve
2. Brake chamber
3. Brake cylinder
4. Brake diaphragm

6-71. What component provides a quick and easy way to adjust air brakes to compensate for wear?

1. Brake camshaft
2. Adjusting screw
3. Pushrod adjuster
4. Slack adjuster

6-72. What valve controls the air pressure delivered to the brake chambers?

1. Tractor protection
2. Quick release
3. Treadle
4. Limiting

6-73. After cleaning a treadle valve, you should apply which of the following lubricants to the internal parts of the valve during reassembly?

1. Engine oil
2. Chassis lube
3. Bearing grease
4. Vaseline

6-74. What valve is designed to exhaust brake chamber air pressure and speed up brake release of the air brake system?

1. Quick release
2. Treadle
3. Safety
4. Trailer control

6-75. In a quick-release valve, as air pressure above the diaphragm is released, the air pressure below raises the diaphragm off the exhaust port. This action allows air in the brake chamber to exhaust at the quick-release valve.

1. True
2. False